

## **PROVISIONAL FILING FOR PATENT**

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### **A PNEUMATIC CLOSED-LOOPED ANTILOCK PRESSURE MODULATING DEVICE FOR PNEUMATIC BRAKE SYSTEMS**

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### **ABSTRACT OF PROVISIONAL FILING**

This invention relates to a control module for a brake system for a semi-trailer; and more particularly to a differential pressure regulator quick release valve in a pneumatic braking system in buses, trucks, and trucks/semi-trailers, singular and in multiple combinations in automotive air brake installations with means for modulating air pressure that employs a diaphragm, a piston and an elastomeric member with pneumatic antilock brake system functions, oscillating functions and internal pressure relief functions, therewith sensing the tire-road surface interface, pneumatic shock wave signals, and dampening shock waves for controlling output signals, without venting air pressure to the atmosphere, thereby transmitting said output signals that directly adjusting brake actuation forces in a closed-looped system.

### **BACKGROUND**

Pursuant to the 49 CFR 571.121, the U.S. National Highway Traffic Safety Administration (NHTSA) has defined antilock brakes as follows: " 'Antilock Braking System' means a portion of a service brake system that automatically controls the degree of rotational wheel slip during braking by: (1) sensing the rate of angular rotation of the wheels, (2) transmitting signals regarding the rate of wheel angular rotation to one or more devices which interpret those signals and generate responsive controlling output signals; and (3) transmitting those signals to one or more devices which adjust brake actuating forces in response to those signals."

Furthermore, as published in 60 Fed. Reg. 13224, the NHTSA states, "As discussed in the NPRM, the definition is sufficiently broad to permit the installation of any antilock braking system, provided that is a "closed-looped" system that ensures feedback between what is actually happening at the tire-road surface interface and what the device is doing to respond to changes in wheel slip."

Furthermore, as published in 60 Fed. Reg. 13227, the American Trucking Association and others commented that the definition of ABS would "preclude anything